

Middle School Mathematics: The Critical Transition from Arithmetic to Algebra

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I. Introduction

- A. Newspapers*
- B. Music*
- C. Toys*
- D. The "aura" of Mathematics*
- E. The difference between Arithmetic and Algebra*
- F. The Common Core Standards (again!)*

II. Typical Trouble Spots in Arithmetic / Mathematics

- A.*
- B.*
- C.*
- D.*
- E.*
- F.*

III. Why Were These Trouble Spots?

- A.*
- B.*
- C.*
- D.*
- E.*
- F.*

IV. Prevailing Attitudes

- A. Personal*
- B. Instructional*

V. "Math Lessons"

A.

B.

C.

D.

VI. The Secret

A. *Three Stages of Learning in Arithmetic*

1. *Concrete*

2. *Pictorial*

3. *Symbolic*

B. *The Difference in Mathematics*

1. *Critical Thinking*

2. *Understanding*

3. *Internalization*

4. *Application*

C. *Requirements*

1.

2.

3.